DETAILED ACTION

1. All outstanding objections and rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on 5/6/2011.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 5/6/2011. In particular, original Claims 5 and 8 and newly added claim 10 recite limitations not previously presented. Specifically, claims 5 and 8 have been amended to recite that the composition does not comprise a nitrogen-containing flame-retardant auxiliary agent, while newly added claim 10, although drawn to similar subject matter recites in claims 5 and 8 excludes the composition from comprising ammonium polyphosphate. In light of the new limitations recited in claim 5 and 8 as well as newly added claim 10, the following action is properly made final.

Claim Objections

4. Claim 5 and 8 are objected to because of the following informalities: claims 5 and 8 recite the phrase "a nitrogen-contain flame retardant auxiliary agent". In order to avoid possible confusion, given that "auxiliary agent" necessary implies that the composition contains a primary flame retardant, it advised that the claims be amended specifying which compounds, i.e. metallic

hydrate or zinc sulfite are the flame retardant agents in the composition. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. Claim 10 recites that the composition does not comprise ammonium polyphosphate. The cited phraseology clearly signifies a "negative" or "exclusionary" limitation for which the applicants have no support in the original disclosure. Negative limitations in a claim which do not appear in the specification as filed introduce new concepts and violate the description requirement of 35 USC 112, first paragraph, *Ex Parte Grasselli, Suresh, and Miller*, 231 USPQ 393, 394 (Bd. Pat. App. and Inter. 1983); 783 F. 2d 453.

The insertion of the above phraseology as described above positively excludes ammonium polyphosphate, however, there is no support in the present specification for such exclusions. While the present specification is silent with respect to the use of ammonium polyphosphate, is noted that as stated in MPEP 2173.05(i), the "mere absence of a positive recitation is not the basis for an exclusion."

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (US 2003/0207979) in view of Rodway et al (WO 2002/073631) and Nakamura et al (US 2003/0207106).

Regarding claim 5, Sato et al discloses an insulated wire comprising a flame retardant resin composition. The fire retardant resin composition is disclosed as comprising 30 to 90 parts by weight polyethylene having a melt flow rate of less than 5 g/10 min and a density of at least 0.30 g/cm^3 (disclosed component a), about 5 to 65 parts by weight of an olefin type polymer containing intra molecular oxygen atoms such as (component b1), 5 to 40 parts by mass of at least one polymer such as acid modified olefin polymer, acid modified styrene thermoplastic, acid modified polyethylene, etc (components c1-c4) and 30 to 250 parts by mass of a metal hydroxide such as aluminum or magnesium hydroxides (Page 1 [0024]-[0028], Page 2 [0029]-[0034], Page 4 [0107]-[0110]). It is noted that the amount of metal hydroxide or hydrate disclosed by the reference is identical to that recited in claim 5. Further, it is noted that the density and melt flow rate of the polyethylene are within the ranges of 5 g/10 min or less and 0.90 g/cm^3 or more presently recited in claim 5. Given that the reference discloses that acid modified styrene, the condition that at least one polymer (B) is modified by acid recited in claim 1 is met. Polyethylene comprises 30 to 90 parts by mass in the total of 100 parts by mass (30 to

90 wt %) while the acid modified styrene comprises 10 to 40 parts by mass in the total of 100 parts by mass (10 to 40 wt %) comprising components (a) (b1) and (c) (Page 3 [0093] and Page 4 [0105]). Given that the reference discloses acid modified styrene it is clear that the disclosed resins meet the proviso that compositions comprises at least one resin modified by acid. It is noted that the amounts of the resin are with the range of 30 to 90 wt % of polyethylene and 70 to 10 wt % of resin (B) recited in claim 1. The reference that the composition is cross-linked (Page 2 [0035]). Given that the reference does not disclose halogenated compounds added to the composition, it is clear that the coating composition is non-halogenated. Additionally, Sato teaches that the composition comprises fire retardant adjuvants (Page 4 [0111]).

While Sato does discloses the use of zinc compounds in the fire retardant composition, the reference does not disclose the specific zinc compound or amounts thereof as required by the present claims

Rodway et al discloses a wire cable or insulation comprising a mixture of polymers i.e. a polypropylene co-polymer in combination with other polymers, magnesium hydroxide, and inorganic materials such as zinc sulfide (Abstract, Page 2). The reference discloses that zinc sulfide is utilized in amount greater than 1 wt %, preferably at least 2 wt % of the composition (Page 2). It is noted that the amount of greater than 1 wt % zinc sulfide overlaps the amount of 0.76 to 5.40 wt %, on a wt % basis recited in the present claims. With respect to zinc sulfide, the reference discloses that zinc sulfide reduce or eliminates the need for a convention metal copper deactivator and additional antioxidants in the polymer compositions (Page 3). Furthermore, the reference discloses that the addition of zinc sulfide results in a wire in automotive wiring harness

which withstands high temperatures, and withstands contact of the wire with common types of tapes, connectors, etc (Page 1).

Given that both Sato and Rodway et al are drawn to fire retardant polymeric compositions containing polyolefin polymer and metal hydrates, in light of the particular advantages provided by the use and control of zinc sulfide and amounts thereof as taught by Rodway et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Sato with a reasonable expectation of success.

The combined disclosures of Sato and Rodway et al teach disclose all the claim limitations as set forth above. However, the references do not discloses a wiring harness comprising a single wire bundle containing non-halogenated insulated wires and a wiring harness protective material for covering the wire bundle comprising vinyl chloride as the base material.

Nakamura et al discloses a wire harness material comprising a substrate made of non-halogen based resin and a wire bundle comprising wires coated with a non-halogen based resin or a bundle comprising a mixture of non-halogen coated and polyvinyl chloride coated wires (Page 3 [0040]). The wire harness comprises a tape base painted with adhesive which prevents plasticizers and adhesive adjuvants from migrating; thereby the wire harness obtains a stable and durable cable quality (Page 3 [0040]).

Given that both Sato and Nakamura et al are drawn to non-halogenated coatings for wires, in light of the particular advantages provided by the use and control of the wire harness and cable bundles as taught by Nakamura et al, it would therefore have been obvious to one of

ordinary skill in the art to include such wire harnesses and wire bundles comprising the coating disclosed by Sato with a reasonable expectation of success.

Regarding claim 8, Sato et al discloses an insulated wire and a wiring harness comprising a flame retardant resin composition. The fire retardant resin composition is disclosed as comprising 30 to 90 parts by weight polyethylene having a melt flow rate of less than 5 g/10 min and a density of at least 0.30 g/cm^3 (disclosed component a), about 5 to 65 parts by weight of an olefin type polymer containing intra molecular oxygen atoms such as (component b1), 5 to 40 parts by mass of least one polymer such as acid modified olefin polymer, acid modified styrene thermoplastic, acid modified polyethylene, etc (components c1-c4) and 30 to 250 parts by mass of a metal hydroxide such as aluminum or magnesium hydroxides (Page 1 [0024]-[0028], Page 2 [0029]-[0034], Page 4 [0107]-[0110]). It is noted that the amount of metal hydroxide or hydrate disclosed by the reference is identical to that recited in claim 5. Further, it is noted that the density and melt flow rate of the polyethylene are within the ranges of 5 g/10 min or less and 0.90 g/cm^3 or more presently recited in claim 8. Given that the reference discloses that acid modified styrene, the condition that at least one polymer (B) is modified by acid recited in claim 8 is met. Polyethylene comprises 30 to 90 parts by mass in the total of 100 parts by mass (30 to 90 wt %) while the acid modified styrene comprises 10 to 40 parts by mass in the total of 100 parts by mass (10 to 40 wt %) comprising components (a) (b1) and (c) (Page 3 [0093] and Page 4 [0105]). Given that the reference discloses acid modified styrene it is clear that the disclosed resins meet the proviso that composition comprises at least one resin modified by acid. It is noted that the amounts of the resin are with the range of 30 to 90 wt % of polyethylene and 70 to 10 wt

% of resin (B) recited in claim 1. The reference discloses that the composition is cross-linked by radiation, i.e., electron beam irradiation (Page 2 [0035]). Given that the reference does not disclose halogenated compounds added to the composition, it is clear that the coating composition is non-halogenated. Additionally, Sato teaches that the composition comprises fire retardant adjuvants (Page 4 [0111]).

While Sato does discloses the use of zinc compounds in the fire retardant composition, the reference does not disclose the specific zinc compound or amounts thereof as required by the present claims

Rodway et al discloses a wire cable or insulation comprising a mixture of polymers i.e. a polypropylene co-polymer in combination with other polymers, magnesium hydroxide, and inorganic materials such as zinc sulfide (Abstract, Page 2). The reference discloses that zinc sulfide is utilized in amount greater than 1 wt %, preferably at least 2 wt % of the composition (Page 2). It is noted that the amount of greater than 1 wt % zinc sulfide overlaps the amount of 0.76 to 5.40 wt %, on a wt % basis recited in the present claims. With respect to zinc sulfide, the reference discloses that zinc sulfide reduce or eliminates the need for a convention metal copper deactivator and additional antioxidants in the polymer compositions (Page 3). Furthermore, the reference discloses that the addition of zinc sulfide results in a wire in automotive wiring harness which withstands high temperatures, and withstands contact of the wire with common types of tapes, connectors, etc (Page 1).

Given that both Sato and Rodway et al are drawn to fire retardant polymeric compositions containing polyolefin polymer and metal hydrates, in light of the particular advantages provided by the use and control of zinc sulfide and amounts thereof as taught by

Rodway et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Sato with a reasonable expectation of success.

The combined disclosures of Sato and Rodway et al teach disclose all the claim limitations as set forth above. However, the references do not discloses a wiring harness comprising a single wire bundle containing non-halogenated insulated wires and a wiring harness protective material for covering the wire bundle comprising vinyl chloride as the base material.

Nakamura et al discloses a wire harness material comprising a substrate made of non-halogen based resin and a wire bundle comprising wires coated with a non-halogen based resin or a bundle comprising a mixture of non-halogen coated and polyvinyl chloride coated wires (Page 3 [0040]). The wire harness comprises a tape base painted with adhesive which prevents plasticizers and adhesive adjuvants from migrating; thereby the wire harness obtains a stable and durable cable quality (Page 3 [0040]).

Given that both Sato and Nakamura et al are drawn to non-halogenated coatings for wires, in light of the particular advantages provided by the use and control of the wire harness and cable bundles as taught by Nakamura et al, it would therefore have been obvious to one of ordinary skill in the art to include such wire harnesses and wire bundles comprising the coating disclosed by Sato with a reasonable expectation of success.

Regarding claim 10, Sato et al discloses an insulated wire comprising a flame retardant resin composition. The fire retardant resin composition is disclosed as comprising 30 to 90 parts by weight polyethylene having a melt flow rate of less than 5 g/10 min and a density of at least

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Given that both Sato and Nakamura et al are drawn to non-halogenated coatings for wires, in light of the particular advantages provided by the use and control of the wire harness and cable bundles as taught by Nakamura et al, it would therefore have been obvious to one of ordinary skill in the art to include such wire harnesses and wire bundles comprising the coating disclosed by Sato with a reasonable expectation of success.

Response to Arguments

10. Applicant's arguments with respect to claims 5, 8 and 10 have been considered but are moot in view of the new ground(s) of rejection. The deficiencies of Sato in view of Lewin with respect to zinc sulfide are remedied by Rodway et in the rejections set forth above.

11. Applicants arguments regarding unexpected results regarding crosslinked polyethylene compositions (Inventive Examples 1-20) compared to those based on polypropylene

(Comparative Examples 19-21) are not found to be persuasive, given that the primary reference, Sato, already recognizes the criticality of utilizing polyethylene with a melt flow rate of less than 5 g/10 min and a density of at least 0.30 g/cm^3.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./
Examiner, Art Unit 1725

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 1725